

REPLACEMENT TITLE

Radial Shaft Seal Having a Sealing Edge with Different Contact Angles Relative to the Medium Side and the Atmosphere Side

REPLACEMENT SECTION

BRIEF DESCRIPTION OF THE DRAWING

Fig. 1 shows an embodiment of the radial shaft seal according to the invention in axial section, wherein only the upper half of the radial shaft seal is shown as it is positioned on the shaft.

Fig. 1A shows an embodiment of the radial shaft seal according to the invention in the same view as Fig. 1 wherein the sealing lip and the shell are comprised of different material as indicated by the different cross-hatching.

Fig. 2 shows purely schematically a conveying structure on the conical surfaces of the sealing lip that are facing the medium and the atmosphere, respectively.

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The conveying action of the dynamic sealing lip 4 can be improved additionally by providing conveying means or conveying structures 27, 28, for example, ribs R, grooves G, wave-shaped profiles or configurations or the like on the conical surface, facing the medium and/or the conical surface 8 facing the atmosphere (see Fig. 2). The conveying structures 27, 28 can extend in the circumferential direction of the sealing lip. It is also possible to employ oppositely oriented conveying structures on the conical surfaces 7, 8. A further improvement of the lubrication situation and of the cooling action can be achieved in that the sealing edge 15 or the conical surfaces 7, 8 in the circumferential direction are undulated or waved-shaped. The undulation can be provided during shaping of the elastomer sealing lip 4 or by an appropriate shaping of the support ring 11. With such a conveying structure, the lubrication situation below the sealing edge 15 or the sealing surface and thus the service life of the sealing ring 1 and its leakage can be adjusted optimally.

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When the medium is not pressurized at all times, the sealing lip 4 should be loaded by an annular spring (~~not~~ illustrated schematically by arrow F in Fig. 1A) in the direction toward the shaft 6. The annular spring advantageously is positioned in a recess within the exterior side 17 of the sealing lip 4, advantageously approximately at the level of the sealing edge (sealing surface) 15.

EMPTY PAGE 10

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